#### **CLAIMS**

## 1. A compound according to Formula 1

$$R_1$$
 $R_2$ 
 $R_3$ 
 $R_4$ 
 $R_4$ 

Formula 1

wherein

Z is NH or O;

X is selected from OH, NH2, OR, NHR, NRR, SH, or SR;

 $R_1$  and  $R_2$  are independently selected from H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle, and  $R_1$  and  $R_2$  together with the carbon atoms to which they are attached may form a 5- or 6-membered ring;

R<sub>3</sub> is substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle; and

wherein R and R<sub>4</sub> are independently H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

### 2. A compound according to Formula 2

$$R_1$$
 $R_2$ 
 $N$ 
 $R_4$ 
 $R_4$ 
 $N$ 
 $R_4$ 

Formula 2

wherein Z is NH or O;

X is CONH<sub>2</sub>, COOR, CONHR, CONRR, heterocycle, R, SO<sub>3</sub>H, P(O<sub>3</sub>H), CH(COOH)<sub>2</sub>, CH(PO<sub>3</sub>H)<sub>2</sub>, tetrazole, or triazole;

R<sub>1</sub> and R<sub>2</sub> are independently selected from H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle, and R<sub>1</sub> and R<sub>2</sub> together with the carbon atoms to which they are attached may form a 5- or 6-membered ring;

R<sub>3</sub> is substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle; and

wherein R and R<sub>4</sub> are independently H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

# 3. A compound according to Formula 3,

$$R_1$$
 $R_2$ 
 $R_4$ 
 $R_4$ 
 $R_4$ 
 $R_4$ 
 $R_4$ 
 $R_4$ 
 $R_4$ 

Formula 3

wherein X is NH2, OR, NHR, NRR, heterocycle, or R;

R<sub>1</sub> and R<sub>2</sub> are independently selected from H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle, and R<sub>1</sub> and R<sub>2</sub> together with the carbon atoms to which they are attached may form a 5- or 6-membered ring;

R<sub>3</sub> is substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle; and

wherein R and R<sub>4</sub> are independently H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

### 4. A compound according to Formula 4 or Formula 5

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$$

Formula 4

$$\begin{array}{c|c} R_1 & \\ R_2 & \\ R_4 & \\ \end{array}$$

Formula 5

wherein U is selected from CH, CR, COR, CSR, CNHR, CNRR, CNHCH<sub>2</sub>COOH, CNHCH<sub>2</sub>COOH, and N;

V is N, CH, or CR;

Z is NH or O;

X is COOH, COOR, CONH<sub>2</sub>, CONHR, CONRR, or heterocycle;

- R<sub>1</sub> and R<sub>2</sub> are independently selected from H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle and fused heterocycle, and R<sub>1</sub> and R<sub>2</sub> together with the carbon atoms to which they are attached may form a 5- or 6-membered ring;
- R', R", R" are independently H, OH, OR, SH, SR, NH<sub>2</sub>, NHR, NRR, NO<sub>2</sub>, Cl, F, Br, I, CN, N<sub>3</sub>, COR, COOH, COOR, CONH<sub>2</sub>, CONHR, CONRR, C(=NH)NHR, CH<sub>2</sub>CH<sub>2</sub>COOH, OCH<sub>2</sub>COOH, NHCONH<sub>2</sub>, NHCHO, NHSO<sub>2</sub>R, NHCOR, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle; and

wherein R and R<sub>4</sub> are independently H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

## 5. A compound according to Formula 6

$$R_6$$
 $R_6$ 
 $R_6$ 
 $R_6$ 
 $R_6$ 
 $R_7$ 
 $R_8$ 

Formula 6

wherein U is selected from CH, CR, COR, CSR, CNHR, CNRR, CNHCH<sub>2</sub>COOH, CNHCH<sub>2</sub>COOH, or N;

D is O, S, NH, NR, or CRR;

R<sub>5</sub> is H, OH, SH, OR, SR, NH<sub>2</sub>, NHR, NRR, O-aryl, or NH-aryl;

- R<sub>2</sub> is H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle;
- R<sub>6</sub> is H, CH<sub>2</sub>CH<sub>2</sub>COOH, CH<sub>2</sub>COOH, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle; and
- wherein R and R<sub>4</sub> are independently H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

### 6. A compound according to Formula 7

$$R_1$$
  $R_2$   $R_4$   $R_5$   $R_6$   $R_6$   $R_8$   $R_8$ 

Formula 7

wherein Z is NH or O;

- R<sub>1</sub> and R<sub>2</sub> are independently selected from H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle;
- R<sub>3</sub> is substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle, fused heterocycle, wherein R may further optionally include a COOH group that is covalently coupled to R via zero to three atoms;
- R<sub>5</sub> and R<sub>6</sub> are either H, alkyl, or together are connected via an additional 1-4 atoms to form a substituted or unsubstituted cyclic group containing 3-6 atoms; and
- wherein R and R<sub>4</sub> are H, substituted or unsubstituted alkyl, alkenyl, alkynyl, aryl, fused aryl, heterocycle or fused heterocycle.

- 7. A pharmaceutical composition comprising a compound according to any one of claims 1-6, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.
- 8. A method of treating a viral disease, comprising administering a composition according to claim 7 to a subject in need of such treatment.